

# Vermont Mental Health Performance Indicator Project

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## MEMORANDUM

TO: Vermont Mental Health Performance Indicator Project  
Advisory Group and Interested Parties

FROM: John Pandiani  
Monica Simon  
Sheila Pomeroy

DATE: August 18, 2000

RE: Hospitalization for Behavioral Health Care, 1990 - 1998

Penetration/utilization rates provide an important indicator of levels of access to health and mental health services. State hospital penetration/utilization rates are one of the core performance indicators for mental health systems of care for the CMHS Sixteen State Performance Indicator Project and for the NASMHPD President's Task Force on Performance Indicators. This indicator, however, is frequently criticized because it does not provide a complete picture of the utilization of inpatient behavioral health care services. In order to address that criticism, the Vermont Performance Indicator Project has obtained basic information on all episodes of behavioral health care in the Vermont State Hospital, the Veterans Hospital in White River Junction, Vermont, the Brattleboro Retreat (the state's only private psychiatric hospital), as well as general hospitals in Vermont, New Hampshire, and neighboring counties of New York State. The attached graph and tables, from our forthcoming report on inpatient behavioral healthcare, provide an overview of the inpatient behavioral health care utilization rates for Vermont residents for calendar years 1990 through 1998. Utilization rates are provided in terms of episodes of care, patient days, and numbers of people hospitalized. Because the data sets used in this analysis do not share unique person identifiers, Probabilistic Population Estimation was used to derive unduplicated counts of people served across facilities.

As you will see, the Vermont State Hospital accounted for only 309 of the total 4,382 episodes of care (7%) in 1998. The total number of episodes of hospitalization for behavioral health care increased substantially (+29%) between 1990 and 1996, and decreased slightly since then. Between 1990 and 1996, the number of episodes of care in the Vermont State Hospital decreased substantially (-27%).

In terms of patient days, the Vermont State Hospital accounted for a much greater proportion of all behavioral health care. In 1998, the 19,961 days of care that occurred at the State Hospital accounted for more than 36% of the total 54,548 days of inpatient behavioral health care. It is interesting to note that the total number of patient days decreased substantially between 1990 and 1998, a period in which the number of episodes of care increased substantially.

The unduplicated number of Vermont residents who were hospitalized for behavioral health care each year during this period was much more stable than either the number of episodes of care or the number of patient days. The unduplicated number of people hospitalized increased by only 10% between 1990 and 1998. (When population growth is taken into account, the increase in the number of people is only 4%.) The number of people who spent time in the Vermont State Hospital decreased by more than 34% between 1990 and 1998.

The tables we are distributing this week may be interpreted in many ways. We have only looked at overall trends for the state as a whole and for the Vermont State Hospital. Please tell us what other things you see in these data and what you make of them. We would also like to receive your ideas for further analysis of these data. If you are willing, we would like to share your observations and your ideas with other recipients of this report. As always you can reach us at 802-241-2638 or [jpandiani@ddmhs.state.vt.us](mailto:jpandiani@ddmhs.state.vt.us).

Table 1-1  
**Episodes of Hospitalization**  
for Behavioral Health Care  
Vermont Residents: 1990 - 1998

### Episodes of Hospitalization by Hospital Type

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total	3,523	3,550	3,515	3,846	4,079	4,164	4,528	4,464	4,382
VT General Hospitals	2,060	1,986	2,020	2,069	2,231	2,142	2,514	2,576	2,451
Vermont State Hospital	488	501	401	382	405	381	354	380	309
Brattleboro Retreat	226	242	256	346	377	519	639	678	761
VA Hospital - WRJ	218	224	235	241	260	254	236	236	236
New Hampshire Hospitals	494	553	504	662	703	730	679	482	500
Other Out-of-State Hospitals	37	44	99	146	103	138	106	112	125

### Episodes of Hospitalization by County of Residence

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total	3,523	3,550	3,515	3,846	4,079	4,164	4,528	4,464	4,382
Addison	113	114	124	148	156	153	199	196	168
Bennington	219	250	229	290	296	345	332	233	231
Caledonia	150	154	153	188	159	181	183	168	151
Chittenden	818	824	706	760	838	759	754	834	811
Essex	31	33	35	35	33	36	44	37	42
Franklin/Grand Isle	155	168	192	186	185	151	220	190	172
Lamoille	105	118	95	103	100	100	108	120	120
Orange	159	175	179	210	161	188	196	167	152
Orleans	165	162	146	186	196	165	158	164	142
Rutland	364	389	394	367	412	450	446	471	595
Washington	491	439	489	450	521	491	606	630	481
Windham	273	276	316	388	420	525	637	676	699
Windsor	463	438	454	522	585	595	624	554	590
Unknown	17	10	3	13	17	25	21	24	28

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, and database extracts provided by the Brattleboro Retreat and Vermont State Hospital. Behavioral health care includes both mental illness and substance abuse.

Table 1-3  
**Patient Days**  
for Behavioral Health Care  
Vermont Residents: 1990 - 1998

**Patient Days by Hospital Type**

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total	82,315	77,816	77,269	73,955	70,786	67,986	64,919	61,548	54,548
VT General Hospitals	22,835	22,066	22,287	21,291	20,962	19,498	20,034	19,781	18,114
Vermont State Hospital	41,265	37,143	35,130	31,602	27,778	27,059	23,452	23,827	19,961
Brattleboro Retreat	7,165	6,288	5,538	7,265	7,589	9,735	12,373	11,709	10,635
VA Hospital - WRJ	3,442	3,244	5,389	3,474	3,792	3,667	3,086	1,850	1,484
New Hampshire Hospitals	7,106	8,523	7,068	8,859	8,482	6,058	4,968	2,990	2,821
Other Out-of-State Hospitals	502	552	1,857	1,464	2,183	1,969	1,006	1,391	1,533

**Patient Days by County of Residence**

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total	82,315	77,816	77,269	73,955	70,786	67,986	64,919	61,548	54,548
Addison	1,988	1,695	2,329	2,750	2,278	2,414	3,051	2,918	2,041
Bennington	3,871	4,167	3,740	4,137	4,570	4,560	4,048	3,728	2,680
Caledonia	2,934	3,122	2,672	2,333	2,173	1,946	2,049	1,964	1,524
Chittenden	18,581	19,957	18,558	18,181	16,940	16,660	13,617	14,943	14,605
Essex	293	507	418	418	751	364	521	504	621
Franklin/Grand Isle	3,755	3,994	5,704	3,790	4,244	3,024	3,962	3,251	2,622
Lamoille	2,844	2,745	1,838	2,334	1,841	1,210	1,328	1,445	1,676
Orange	2,760	2,872	3,441	3,015	2,171	2,213	2,629	2,030	2,112
Orleans	2,365	2,857	2,601	2,512	2,643	2,285	3,036	2,286	1,792
Rutland	6,285	5,626	5,858	5,038	5,233	6,856	5,376	4,444	4,757
Washington	19,120	15,036	14,408	12,771	12,749	11,193	10,034	9,271	6,510
Windham	6,744	6,173	8,050	8,282	6,883	7,673	8,491	7,872	7,475
Windsor	9,582	8,711	7,567	7,892	7,669	6,864	6,392	5,736	5,076
Unknown	1,193	354	85	502	641	724	385	1,156	1,057

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, and database extracts provided by the Brattleboro Retreat and Vermont State Hospital. Behavioral health care includes both mental illness and substance abuse.

Table 1-7  
**Unduplicated Number of People Hospitalized**  
for Behavioral Health Care  
Vermont Residents: 1990 - 1998

**Unduplicated Number of People Served by Hospital Type**

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total	2,596 ± 18	2,571 ± 18	2,506 ± 17	2,618 ± 18	2,776 ± 20	2,744 ± 19	2,919 ± 20	2,876 ± 20	2,855 ± 20
VT General Hospitals	1,672 ± 12	1,596 ± 11	1,609 ± 12	1,589 ± 11	1,652 ± 12	1,568 ± 12	1,781 ± 13	1,775 ± 13	1,717 ± 12
Vermont State Hospital	413	428	349	323	344	330	289	314	270
Brattleboro Retreat	204	212	215	267	296	421	486	536	485
VA Hospital - WRJ	171 ± 2	174 ± 2	164 ± 2	187 ± 2	192 ± 3	200 ± 3	182 ± 3	146 ± 2	141 ± 2
New Hampshire Hospitals	374 ± 3	410 ± 3	386 ± 3	495 ± 4	558 ± 5	546 ± 5	480 ± 4	374 ± 4	395 ± 3
Other Out-of-State Hospitals	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Unduplicated Number of People Served by County of Residence**

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Total	2,596 ± 18	2,571 ± 18	2,506 ± 17	2,618 ± 18	2,776 ± 20	2,744 ± 19	2,919 ± 20	2,876 ± 20	2,855 ± 20
Addison	88 ± 1	88 ± 1	89 ± 1	114 ± 1	104 ± 1	112 ± 1	120 ± 1	130 ± 2	116 ± 1
Bennington	171 ± 2	181 ± 2	165 ± 2	177 ± 2	205 ± 2	221 ± 2	232 ± 2	161 ± 1	154 ± 2
Caledonia	128 ± 1	128 ± 1	124 ± 1	138 ± 2	125 ± 1	138 ± 1	123 ± 1	114 ± 1	112 ± 2
Chittenden	598 ± 5	625 ± 5	544 ± 4	545 ± 4	591 ± 5	533 ± 4	546 ± 4	583 ± 5	552 ± 4
Essex	23 ± 0.5	29 ± 0.6	29 ± 0.6	30 ± 0.6	25 ± 0.5	27 ± 0.6	34 ± 0.7	29 ± 1	32 ± 1
Franklin/Grand Isle	125 ± 1	134 ± 1	148 ± 2	140 ± 2	149 ± 2	123 ± 1	161 ± 2	148 ± 2	132 ± 2
Lamoille	86 ± 1	93 ± 1	76 ± 1	79 ± 1	72 ± 1	75 ± 1	69 ± 1	65 ± 1	81 ± 1
Orange	121 ± 1	128 ± 1	119 ± 1	117 ± 1	119 ± 1	130 ± 1	136 ± 2	120 ± 1	115 ± 1
Orleans	126 ± 1	116 ± 1	111 ± 1	132 ± 1	126 ± 1	118 ± 1	118 ± 1	120 ± 1	104 ± 1
Rutland	301 ± 3	291 ± 3	299 ± 3	270 ± 2	304 ± 3	316 ± 3	302 ± 3	324 ± 3	411 ± 3
Washington	359 ± 3	303 ± 3	334 ± 3	293 ± 3	318 ± 3	303 ± 3	344 ± 3	377 ± 4	329 ± 3
Windham	207 ± 2	211 ± 2	222 ± 2	250 ± 2	300 ± 3	318 ± 3	393 ± 3	412 ± 3	421 ± 3
Windsor	323 ± 3	314 ± 3	313 ± 3	377 ± 3	374 ± 3	388 ± 3	390 ± 3	345 ± 3	365 ± 3
Unknown	16 ± 0.4	9 ± 0.3	3 ± 0.2	12 ± 0.3	17 ± 0.4	21 ± 0.5	18 ± 0.4	21 ± 0.4	26 ± 0.5

Information is derived from the Hospital Discharge Data Set maintained by the Vermont Health Department, and database extracts provided by the Brattleboro Retreat and Vermont State Hospital. Behavioral health care includes both mental illness and substance abuse.

The State of Vermont does not have unique client identifiers across service providers. For this reason, Probabilistic Population Estimation has been used to provide unduplicated counts of people served (with 95% confidence intervals). Estimates of the number of people served by Massachusetts and New York hospitals are not provided because the data is inadequate to provide probabilistic population estimates. Actual person counts are available for Brattleboro Retreat and the Vermont State Hospital.